

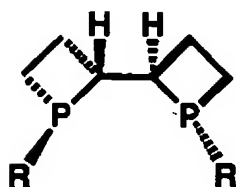
ABSTRACT

The present invention provides a novel optically active phosphorus-chiral diphosphetane compound useful as a ligand of a transition metal catalyst which is used for catalytic asymmetric synthesis such as asymmetric hydrogenation reaction and the like, the ligand capable of creating a stable asymmetric space when coordinating to a central metal, an intermediate of the compound, and a transition metal complex catalyst having the compound as a ligand.

The optically active diphosphetane compound of the present invention has a structure represented by formula

(1):

[Chem. 1]



(1)

(wherein R represents a linear, branched, or cyclic alkyl group having 2 to 20 carbon atoms).